Chapter 4

Conservation is getting nowhere
because it is incompatible with our
Abrahamic concept of land. We abuse land
because we regard it as a commodity belonging
to us. When we see land as a community
to which we belong, we may begin
to use it with love and respect.
There is no other way for land to survive
the impact of mechanized man, nor for us to
reap from it the esthetic harvest it is capable,
under science, of contributing. That land is a
community is the basic concept of ecology,
but that land is to be loved and respected
is an extension of ethics. That land yields
a cultural harvest is a fact long known,
but latterly often forgotten.

Aldo Leopold
A Sand County Almanac, 1949

Acquisition Plan

A. Introduction

This strategic analysis is intended to provide a framework from which decisions regarding the acquisition of land for desert preserves can be made. This chapter discusses the various methods of acquiring or protecting land for the Sonoran Preserve, potential funding sources, estimated amounts of funding available, timing of funding sources, and scenarios that explore the implications of different acquisition strategies. For a more complete discussion of this analysis, see the separate report prepared by the Planning Department titled *Desert Preserve Acquisition Strategic Analysis* (DPASA) (Planning Department 1998). This analysis refines the issues presented in the *Desert Preserve Preliminary Plan* (PRLD 1994) and provides an outline for the very complex process of acquiring property for preservation.

In developing the DPASA, which focused on the NSA, data on the land's physical features, property ownership, development growth trends, and financing options were all studied. In order to accomplish this, physical data were mapped using a GIS. A computer model was developed which could take the available physical data and, using funding scenarios and growth assumptions developed by the PRLD and the Planning Department, evaluate which land could potentially be acquired under each alternative. Because time is a critical factor affecting the opportunity to preserve undisturbed desert lands, the acquisition computer model was developed prior to the final development of the *Sonoran Preserve Master Plan*. A goal of acquiring 25,000 acres within the study area was used for this analysis. As stated previously, the Sonoran Preserve is planned for 21,500 acres.

There are many steps and decision points in the implementation of an ambitious public acquisition effort. This chapter does not describe every aspect of such an effort but provides a basis for understanding the steps of the acquisition and implementation process.

B. Real Estate Process

Land ownership is an important attribute affecting the preserve acquisition process. Currently there is significant private and public property in the NSA. Each type of ownership has its own unique characteristics and restrictions that must be understood. Private landowners and the Arizona State Land Department (ASLD) are the two types of landowners of principal concern for preserve acquisition.

Private landowners are protected by the United States and State of Arizona Constitutions from takings by local or state governments. In some cases, private lands can be contributed to the city through the zoning or site plan review process. Parcels can also be acquired through a negotiated purchase or condemnation action at market value. There are no provisions under state law to acquire privately held lands for public use other than at market value.

The ASLD owns the majority of land in the study area. In the NSA, the ASLD owns three-quarters of the lands proposed for the Sonoran Preserve (Figure 4.1). Trust land must be designated for sale by the land commissioner under one of the categories provided for by law, then sold or leased at market value for the highest and best use. Trust lands cannot be donated. The recently approved Arizona Preserve Initiative (API) provides a new category for designation of land for disposal, making conservation lands a possible option. The value of land considered suitable for conservation under the API is still based on market value for highest and best use.

In the SSA, the ASLD owns one section of land adjacent to the south side of South Mountain Park. Because this land has been previously planned for urban development, it is excluded from consideration under the API. The city could acquire some of this section of land during the zoning or site plan review process. Once a specific parcel is approved for acquisition by the Phoenix City Council, the real estate division will take the lead in the acquisition process. They will handle preserve acquisitions as they do any other land purchase.

C. Acquisition Techniques and Financing Options

The *Desert Preserve Preliminary Plan* identified a number of financing options and acquisition techniques. Building on that study, the DPASA looked at each option and technique in more depth. In this analysis, the term *acquisition techniques* includes both purchase and protection through government regulation. Several acquisition techniques, enumerated below, were considered.

Time is a critical factor affecting the opportunity to preserve undisturbed desert lands.

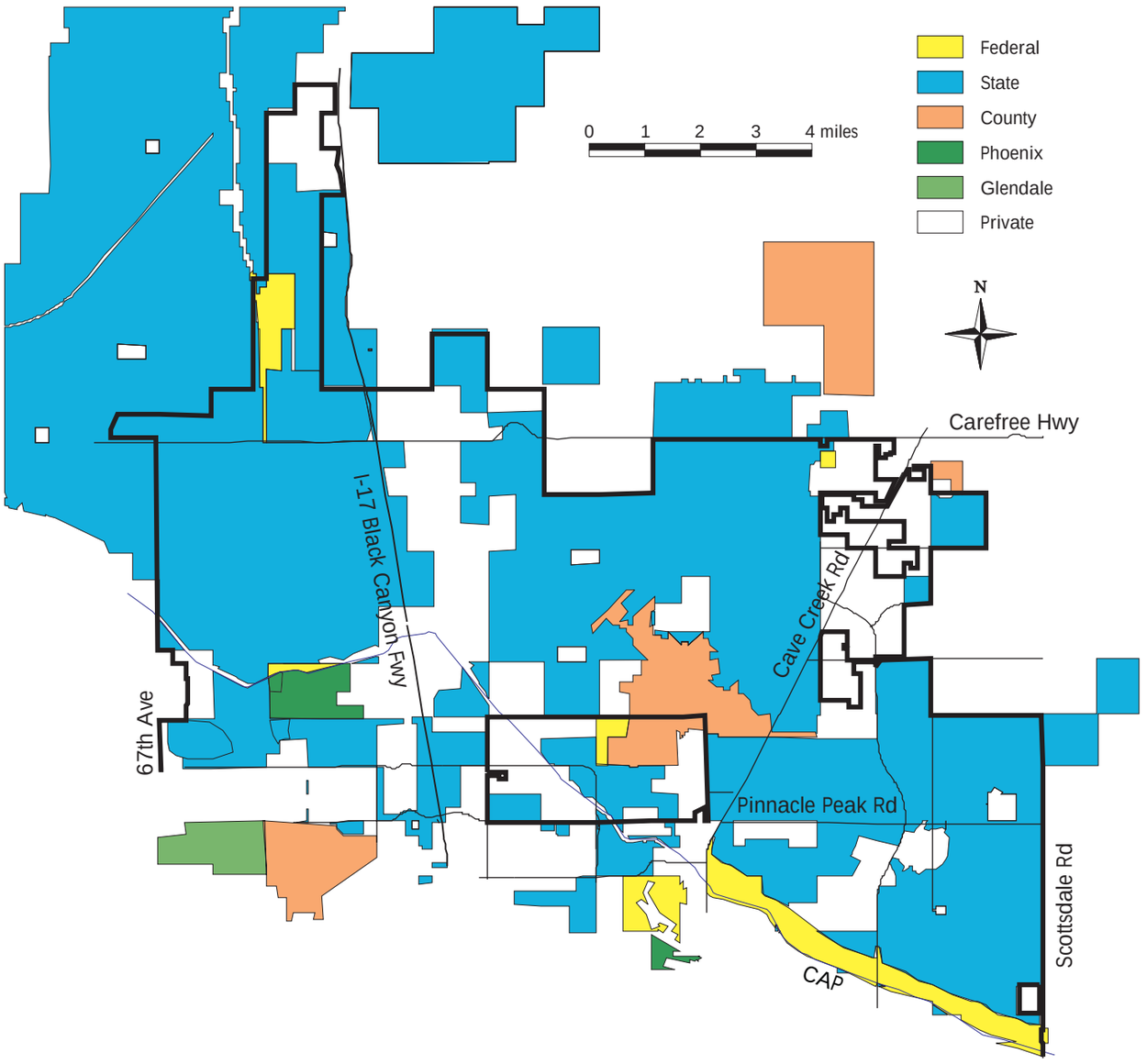


Figure 4.1 Land ownership

City Acquisition Techniques
- Fee simple purchase
- Purchase of development rights (PDR)
- Purchase of rights-of-way / easements
- Leases
- Condemnation / eminent domain
- Donations and gifts

Governmental Regulation Protection Techniques
- Transfer of development rights (TDR)
- Planned community district (PCD)
- Planned residential district (PRD)
- Hillside ordinance
- Special overlay district
- Design guidelines
- Performance zoning
- Dedications / exactions

The DPASA determined that fee simple purchase and transfer of development rights are the most viable acquisition techniques.

Fee Simple Purchase
The city uses funds to purchase property available for sale. The source of funds can vary and may include the general fund, sales tax, bonds, impact fees, grants, or loans. Of these potential sources, sales tax, bonds, and impact / infrastructure fees were considered the most relevant due to the scope of acquiring 20,000 to 25,000 acres of land.

Transfer of Development Rights
Owners are allowed to transfer development (housing units) permitted by vested zoning to another parcel which has been designated as suitable to support the increased development. Arizona state law does not permit TDR in the true sense, but many communities are finding means for accomplishing the intent. This can be done through the rezoning process with two contiguous parcels either under the same ownership or with two owners jointly filing a rezoning request. This method does not require funds other than those needed for city staffing to implement and monitor the program.

Implementation and monitoring of TDR programs are staff-intensive activities. It would take a change in the city ordinance to do true TDR. If policy changes are made, TDR has the potential to acquire significantly more preserve lands, although as densities are transferred, increased densities result elsewhere. Potential financing options considered in the DPASA include:

- General purpose taxes
  - Sales
  - User
  - Property
- Bonds
- Impact infrastructure fees
- Grants
- Fund-raising program
- Government coordination
  - Land exchange
  - Preferential tax treatment
- Voluntary landowner participation / nonprofits
  - Conservation easement
  - Preservation easement
  - Land trusts

The DPASA determined that three basic public financing options are available to the City of Phoenix: dedicated sales tax, general obligation bond funds from property tax, and desert preservation impact / infrastructure fees.

Sales Tax
Fluctuations in the economy can directly affect voter generosity. As with bond programs, bringing a sales tax increase to the voters has risks. A negative public vote on this issue would be detrimental to the program. Public opinion polling can lessen but not completely alleviate this concern. Sales tax increases do not have to be approved by the voters. The City Council can simply vote for a sales tax increase; however, this may not be politically acceptable. Estimates were prepared for a 1 / 10-, 1 / 4-, and 1 / 2-cent sales tax. The estimated annual funds generated would be approximately $19,000,000; $47,000,000; and $94,000,000, respectively.

Bonding
Phoenix voters have generally exhibited a willingness to approve bond measures. Floating such a bond proposal is not without risk. A negative public vote on this issue could be detrimental to the entire program. Risk can be assessed to some degree by public opinion polling prior to beginning public discussions of the bond. The City of Phoenix has no available general obligation bonding capacity for property tax–supported capital improvement programs. It is estimated that additional capacity will not be available until 2000. Work should begin sooner to prepare for a successful bond election.

A preliminary capacity analysis prepared by the finance department in April 1997 showed that the current secondary property tax rate would support $150 million in property

Fee simple purchase and transfer of development rights are the most viable acquisition techniques.

tax–supported bonds. Assuming no change in the current tax rate, there would be approximately $4,400,000 available for the 2000–2005 Capital Improvement Program (CIP). A ten-cent property tax rate increase would increase this amount to $8,900,000. A 20-cent property tax rate increase would raise the amount to $12,600,000 for the 2000–2005 CIP.

Infrastructure/Impact Fees

Infrastructure fees can be levied on development based on the use or potential benefit to subject properties. Infrastructure fees can only be used to pay for impacts directly related to new development. These development-related fees will only address approximately 15 percent of the total cost of a preserve acquisition program. Preservation would need to be added to the city infrastructure fee program. Funds made available through impact fees are dependent on the timing of development.

The analysis illustrated that there are a few acquisition techniques and funding options that will be absolutely vital to the success of this program due to the goal of acquiring a significant amount of land. A general purpose sales tax is the only technique that can readily achieve this goal itself. All other techniques are inadequate when considered alone. Combinations of acquisition techniques and financing options will be the most cost effective way to acquire the large acreage required to realize the master plan. Secondary sources such as grants, donations, and exchanges should be sought or utilized if available. For example, a lease may be appropriate to hold a property until it can be purchased. However, this example would add costs to the program.

The analysis illustrated that there are a few acquisition techniques that will be absolutely vital to the success of this program. A general purpose sales tax is the only technique that can readily achieve the goal of acquiring a significant amount of land.

D. Acquisition Modeling

In order to assess the effectiveness and implications of different acquisition strategies and growth scenarios, a simple model to simulate the desert preservation land acquisition process was developed. The Preservation Acquisition Model (PAM) is a simple goal-seeking model based on a modified desirability rating and resource allocation. PAM's basic goal is to acquire as much highly desirable land for preservation as possible, while considering specific resource constraints. PAM is structured to quickly test the allocation of resources resulting from scenarios utilizing different financing options and acquisition techniques. Risk analysis is then used to assess and evaluate the results of multiple acquisition strategies.

Data Coverages

Potential lands that would be desirable to incorporate into a Sonoran Desert Preserve were mapped using the city's GIS and input into the PAM. The natural and existing features defined in DPASA include: slope, washes, floodways, floodplains, archaeological sites, and proposed features that included activity centers and access points.

Each land feature or attribute was given weighting to determine the priority for acquisition (Table 4.1). Some parcels may have more than one attribute and, therefore, a higher cumulative weight. The result of this exercise produced a prioritization of parcels for preservation. Other information used in the analysis included property ownership and the general plan.

Weighting for Land Features

Property Attribute	Weighting
Slopes greater than 10%	60
Slopes greater than 5%	45
Slopes less than 5%	30
Major washes	45
Secondary washes	30
100-year floodplain	15
Near-term potential development	30
Proposed activity center/access point	10
Archaeological site	10

Table 4.1 Weighting for land features

From this information, the Planning Department developed three additional maps for use in the acquisition model. First, the Planning Department analyzed the study area and determined areas where development was likely to occur in the near-term, intermediate-term, and long-term to derive a development potential map. Second, development potential was considered with the desirability of specific parcels to develop a development priority map. Third, the Planning Department considered the physical features of the land to generate a preservation priority map.

Growth Assumptions

Two growth scenarios were tested in the DPASA. The current growth scenario assumed that growth would continue at about the same rate that has been experienced during the past several years. Accelerated growth assumed a growth rate of double the current growth rate. The accelerated growth assumes much of the current development south of the CAP Canal would move north as land becomes available.

In both cases, the study period extended over 40 years. For modeling purposes, the 40 years were broken into eight five-year periods. Several funding sources were incorporated

into the model that included sales tax, bonds, and infrastructure fees. The sales tax amount used in the model is based on a 1/10-cent sales tax. The bond amount assumes there would be no increase in property taxes. The infrastructure fees were assumed to start in the first period but would not accumulate a significant amount for acquisition until the second period.

Land Costs

Monthly sales databases (Kammrath and Associates 1993–97) were used to determine appropriate land values. The real estate division was consulted on the variety of factors influencing land values. The most significant factor was development timing. The value of land is typically influenced by the proximity of infrastructure, zoning, and the presence of surrounding development. If any or all of these factors are not in place or not expected in the near future, land values are low. If all of these factors are in place or expected in the near future, land values are high. With this understanding, assumptions on land values were developed (Table 4.2).

Land Costs

Projected Development Timing	20- to 100-Acre Acquisitions
1 to 5 years	$45,000/acre
5 to 10 years	$25,000/acre
10 to 15 years	$10,000/acre
More than 15 years	$10,000/acre

Table 4.2 Land costs

Land Acquisition Modeling Results

The modeling analysis was not intended to be a definitive prescription for actual acquisition of any particular property. The information is intended to be used to make strategic decisions and be further refined as additional studies are completed and more detailed information is available. Two scenarios, high support and low support, were tested with the above data and assumptions using accelerated and current growth assumptions.

The 1/10-cent sales tax for 10 and 20 years acquires more land in both scenarios, approximately 9,000 to 24,000 acres. TDR is the next most effective financing option, acquiring about 2,000 to 6,000 acres. Bonds acquire about 2,000 acres and infrastructure fees acquire about 1,000 to 2,000 acres, as they are directly proportional to the amount of development occurring (Table 4.3).

Acquisition Technique Summary

Technique/Fund	Cost (000,000)	Acres (000)
Infrastructure Fee	$16 to $31	1.0 to 2.0
Bonds	$27 to $36	1.8 to 3.3
TDR	$40 to $120	2.0 to 6.0
Sales Tax	$190 to $380	9.0 to 24.0

Table 4.3 Acquisition technique summary

The pace of development and its location can influence what land is acquired for preservation. Some property is desirable for development, some for preservation, while other property is desirable for both. Where there is competition between development and preserve acquisition, having the ability to acquire the property before it becomes considered for development is essential for highly desirable properties (Figure 4.2).

Risk Analysis

All of the acquisition scenarios were compared to determine which parcels with high preservation value are at the greatest risk of being developed. The acquisition scenarios were weighted according to an analysis of their likelihood to occur. It is assumed that the current growth scenarios are more likely to occur as well as the scenarios with a ten-year sales tax, bond, TDR, and infrastructure fees.

The risk analysis examined how the different scenarios meet the preservation goals (Figures 4.3, 4.4, 4.5, 4.6). Risk scores for parcels in each scenario were added together to determine a final risk score. The scores were then normalized into a 0 to 100 scale (the higher the number the higher the risk that a parcel will not be acquired). Output from the analysis illustrates which parcels, desirable for preservation, face the greatest risk of *not* being acquired for preservation (Figure 4.7).

Three significant results were produced by the risk analysis. First, areas with imminent development (a Planned Community Development has been or probably will soon be filed with the city to acquire zoning) or that are expected to develop soon represent the greatest risk for not being acquired for the preserve. Development could occur in these areas before a funding source is available to acquire the land.

Second, land with 5 to 10 percent slopes, mountain buffers, and wash buffers have the next greatest risk of not being acquired. These properties are desirable for future development as well as preservation. TDRs will have limited success in these areas for securing land for preservation due to the development potential of these lands.

competition

Where there is competition between development and preserve acquisition, having the ability to acquire the property before it becomes considered for development is essential for highly desirable properties.

Figure 4.2 Land lost to development

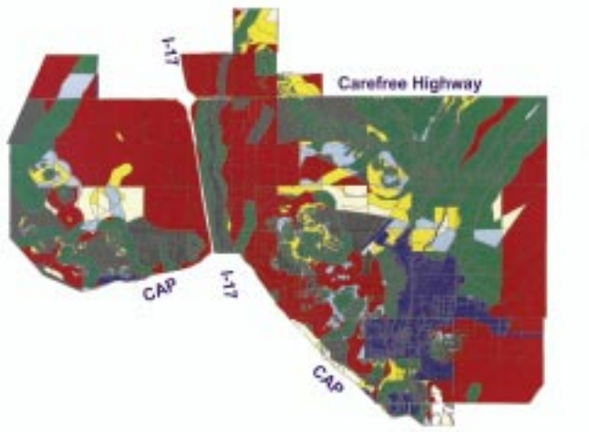


Figure 4.3 Acquisition scenario: fast growth / high support

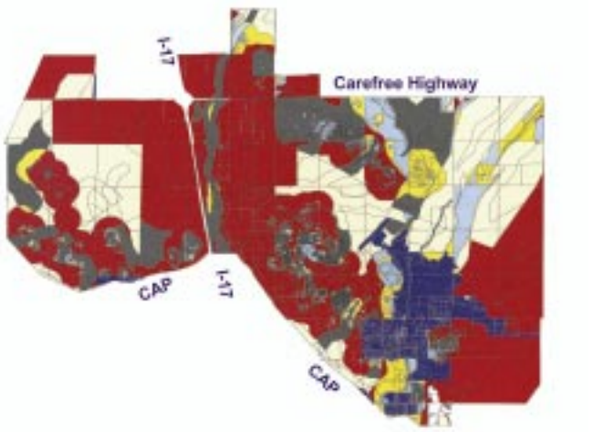


Figure 4.4 Acquisition scenario: fast growth / low support

Third, areas such as major washes (Skunk Creek, Cave Creek, Deadman, and Apache Washes) and mountaintops (steep slopes) are almost always acquired for preservation but also have limited or no development potential.

The highest risk assessment is the result of the timing of development and availability of funding. When development is occurring faster than acquisition resources become available, lands desirable for preservation could be lost to development pressure. The risk analysis identifies potential areas where special consideration may need to be taken in order to secure these parcels.

growth

With faster growth rates, the need to have readily available funds increases because it enables the purchase of land desired for preservation that might otherwise be developed.

E. Funding Implications

The following conclusions were reached during the course of the acquisition analysis.

Growth rates affect what land can be acquired and in what manner it is purchased. With faster growth rates, the need to have readily available funds increases because it enables the purchase of land desired for preservation that might otherwise be developed. This makes funding techniques that can be available quickly, such as bonds or sales tax, more critical.

Each of the different funding sources provides different opportunities and constraints. Sales tax and bonds can provide funds for acquisition earlier in the program. A 1/10-cent sales tax could acquire approximately 23,000 acres over a 20-year period based on the projections used in the acquisition analysis. Sales tax produces significantly more funds than either bonds or impact fees.

Bond funds could acquire approximately 2,000 acres. Impact fees only accumulate as the area develops and are directly proportional to the amount of development. Impact fees could acquire up to 2,000 acres. In order to use impact fees, a desert preservation category would have to be added to the existing impact fee program. This would require City Council action.

TDR can acquire a significant amount of land, but cannot meet the entire goal by itself. Theoretically, TDR could ultimately acquire approximately 18,000 acres. However, the target density of 4.44 dwelling units per acre significantly exceeds the greatest density in any existing village in the city and is thus unlikely to occur. Under the scenarios used in this study, TDR acquired a maximum of about 10,000 acres. As a primary acquisition technique, TDR can lower the cost of acquiring the preserve. However, densities in the NSA will increase as will the risk of losing some of the land desirable for preservation.

Secondary and alternative funding options, such as grants, donations, or coordination with other acquisition programs, should be sought based on their availability. These funds could be especially useful for unique sites such as those with archaeological significance or other special characteristics. Coordinating with the FCDMC for purchasing floodplains could acquire approximately 3,000 acres for both incorporation into the preserve and flood control.

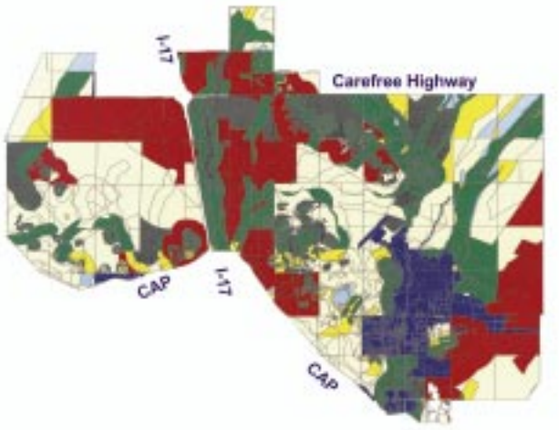


Figure 4.5 Acquisition scenario: slow growth/high support

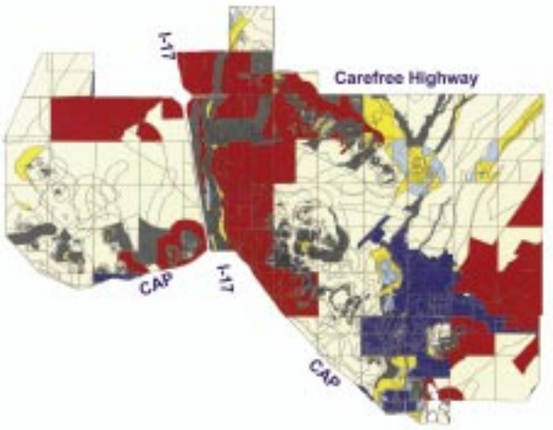
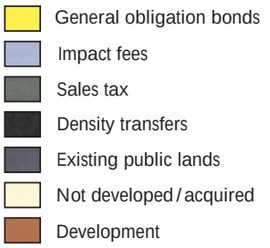


Figure 4.6 Acquisition scenario: slow growth/low support



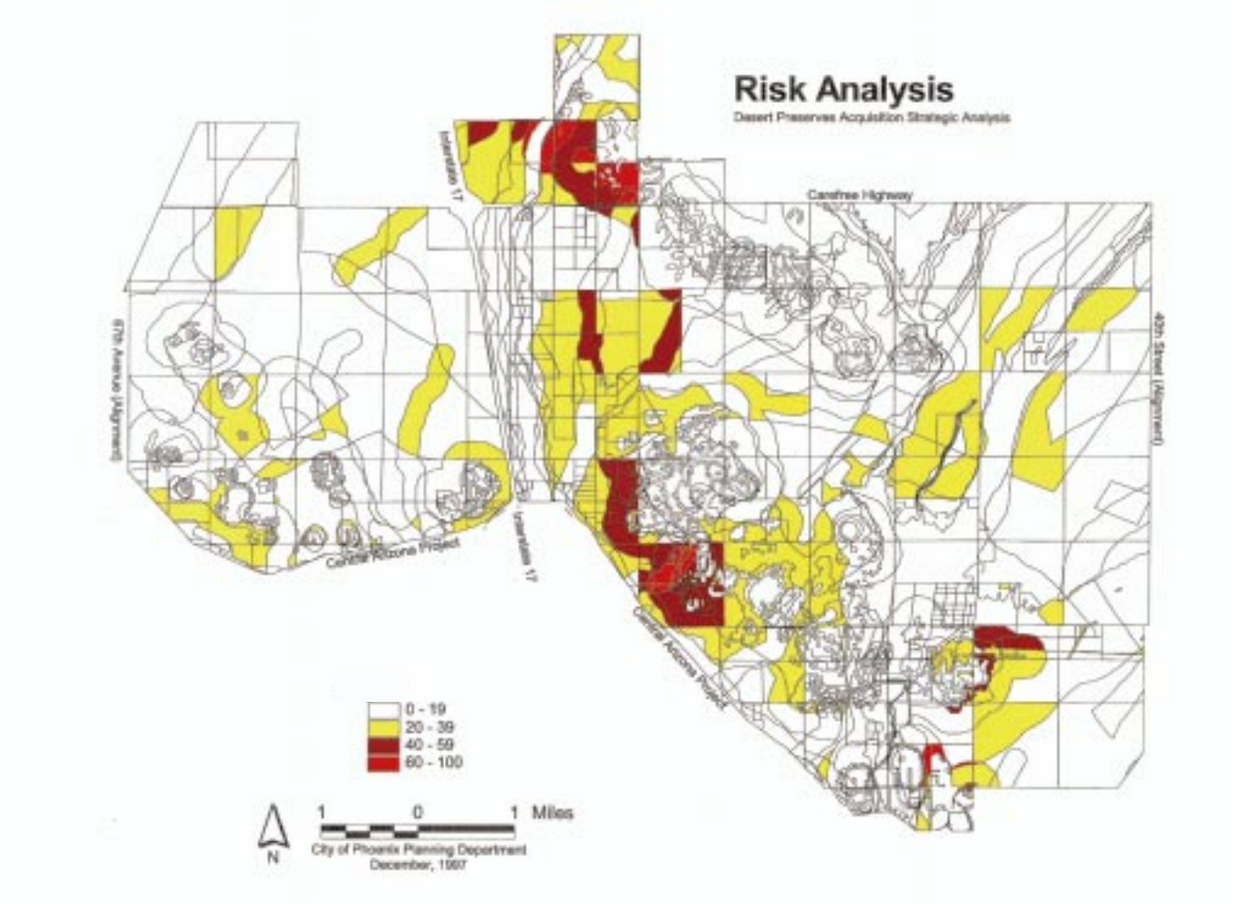


Figure 4.7 Risk analysis